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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET. NO.	CONFIRMATION NO.
10/634,693	08/05/2003	Joseph F. Skovira	POU903100US1	7585

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EXAMINER
ZHE, MENG YAO

ART UNIT	PAPER NUMBER
2195	

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01/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/634,693	SKOVIRA, JOSEPH F.
	Examiner	Art Unit	
	MengYao Zhe	2195	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 November 2007_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-3,6-10,13-16,19 and 20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-3,6-10,13-16,19 and 20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/ are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-3, 6-10, 13-16, 19-20 are presented for examination.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 1-3, 6-10, 13-16, and 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A.   The following claim languages are unclear and indefinite:

i)   Claim 1, lines 3-4, it is uncertain what the relationships are among "one system of a grid computing environment", "another system of the grid computing environment", "a manager daemon", and "a scheduler" <i.e. Is there only one grid computing environment? If so, does this environment contain multiple systems, where each system has its own manager daemon and a scheduler?>

Lines 11-12, it is uncertain how "at least a portion of the obtained scheduler information" may be used for scheduling and workload balancing <i.e. Specifically, how are the scheduler information used?>

Lines 13-14, it is unclear what is meant by "allowing the job to run

out of order" <i.e. are the jobs within one system running out of order? If

so, then why does the manager daemon of that system need scheduling

information from another system?>.

Claims 8 and 15 have the same deficiencies as claim 1 above.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-3, 6-10, 13-16, 19-20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over DeBettencourt et al., Patent No. 6,279,001 (hereafter DeBettencourt)

in view of Liu et al., Patent No. 5,031,089 (hereafter Liu).

6.   As per claims 1, 8, and 15, DeBettencourt teaches the invention substantially as

claimed including a method of balancing workload of a computing environment

(abstract, lines 5-6), said method comprising:

obtaining, by a manager daemon of one system of a grid computing environment

(Fig 1: the manager 110 corresponds to manager daemon; a host correspond to a

system in the network, and the network corresponds to the grid computing

environment.), scheduler information from a scheduler of another system of the grid

computing environment (Column 10, lines 30-36; Column 13, lines 8-25), said scheduler

information including job queue of waiting jobs for the another system (Column 13, lines

15-20), shadow time for the next waiting job of the another system indicating how long

the job needs to wait for resources, and one or more resources currently unavailable

due to shadow time (Column 13, line 16; Column 11, Table 2; Column 12, Table 3, item

20);

performing by the manager daemon workload balancing of at least two systems

of the grid computing environment, each system of the at least two systems comprising

a scheduler to schedule workload on its system, said workload balancing using at least

a portion of the obtained scheduler information (Column 13, lines 20-25)

7.   Debettencourt does not teach scheduler information including current free nodes

of the another system and wherein the workload balancing comprises backfill

scheduling a job, said backfill scheduling allowing the job to run out of order as long as

it does not affect the start time of another job scheduled to execute.

However, Liu teaches scheduler information including current free nodes of the

another system (Column 9, lines 35-65) and wherein the workload balancing comprises

backfill scheduling a job, said backfill scheduling allowing the job to run out of order as

long as it does not affect the start time of another job scheduled to execute (Abstract:

transferring task from a heavily loaded queue of a computer to another computer with a

under-loaded queue corresponds to backfill scheduling).

8.   It would have been obvious to one having ordinary skill in the art at the time of

the applicant's invention to modify the teachings of Debettencourt with scheduler

information including current free nodes of the another system and wherein the

workload balancing comprises backfill scheduling a job, said backfill scheduling allowing

the job to run out of order as long as it does not affect the start time of another job

scheduled to execute, as taught by Liu, because it allows load distribution across

multiple computers.

9.   As per claims 2, 9, and 16, DeBettencourt teaches wherein the scheduler on

each system is adapted to perform backfill scheduling (Column 10, lines 30-36; Column

13, lines 8-25).

10.   As per claims 3 and 10, DeBettencourt teaches wherein scheduler information is

obtained from at least two schedulers, and wherein one scheduler of the at least two

schedulers is a different scheduler from at least one other scheduler of the at least two

schedulers (Fig 1: each host has its own queue and scheduler maintained by the agent,

which differs from agents of another host).

11.   As per claims 6, 13, and 19, DeBettencourt teaches wherein the workload

balancing includes determining which system of said at least two systems a job is to be

assigned; and assigning the job to the determined system (Column 15, lines 40-55;,

Column 16, lines 46-56).

12.   As per claims 7, 14, and 20, Liu teaches wherein the workload balancing

includes removing a job from one system of the at least two systems; and assigning the

job to another system of the at least two systems (Abstract).

Response to Arguments

13.   Applicant's argument filed on 6/15/2007 regarding to claims 1-3, 6-10, 13-16, 19-

20 have been fully considered, but they are not persuasive.

14.   In the remark applicant argued in substance that:

i)   The invention disclosed by the applicant has two systems, where one

system obtains scheduler information from another system. However,

DeBettencourt only has one host acting as a system, and that the scheduler

information obtained by the agent is not from a different system, the information,

rather, all come from one host.

ii)   Server queue delay is not the same thing as shadow time, which is

dynamic

iii)   The teachings of Liu do not have backfilling, which is essentially letting a

job run out of order.

15.   The Examiner respectfully disagree with the applicant, as to point

i)   There are multiple hosts in the grid computing environment (Fig 1, right

hand side: not there are three hosts shown). The agent within each host obtains

information regarding to that host and sends it over to the manager (Column 6,

lines 24-27). The manager can then pass that information to each interceptor that

resides in each host (Column 7, lines 14-18; lines 28-29). So essentially in the

grid computing environment, each host has the ability to obtain load information from other hosts in this grid computing environment.

ii)   It is uncertain what is meant by dynamic shadow time. Moreover, the applicant did not state that the shadow time is dynamic in the claims. Finally, since the applicant amended claim 1, new references within DeBettencourt is found in regards to the teachings of shadow time (Please see rejection for claim 1).

iii)   The applicant did not clearly state what is meant by job running out of order. It is uncertain if jobs within one system is running out of order, or jobs across two systems are interchanged and mixed so that they run out of order in the sense that a job that is suppose to run in system A, which is heavily loaded, gets moved to the end of a queue of an under-loaded system B, in which case, the teachings of Liu does disclose this (Please see claim 1 rejection).
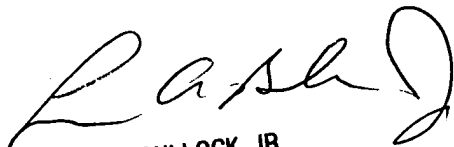
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MengYao Zhe whose telephone number is 571-272-6946. The examiner can normally be reached on Monday Through Friday, 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER